



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,340	12/19/2001	Linda D. Williams	33967US	3488

7590 08/27/2003

RICHMOND, HITCHCOCK,
FISH & DOLLAR
P.O. Box 2443
Bartlesville, OK 74005

EXAMINER

YILDIRIM, BEKIR L

ART UNIT PAPER NUMBER

1764

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,340

Applicant(s)

WILLIAMS ET AL.

Examiner

Bekir L. YILDIRIM

Art Unit

1764

-- Th MAILING DATE of this communication app ars on the cov r sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin et al. (USP 6,140,547) alone or in view of Sherman (USP 5,406,018).

Lin et al. teaches a process for izomerization of hydrocarbons using essentially the same catalyst under the same conditions, wherein the activity of the catalyst is improved by the addition of an aluminum halide into the reaction medium. The additive, preferably comprising a metal chloride compound such as aluminum chloride (AlCl.sub.3), and organic chloride compound are generally injected into the feed hydrocarbon stream, or into the hydrogen stream, or, preferably, into the isomerization feed stream of at least one feed hydrocarbon and hydrogen, which is passed into the isomerization zone resulting in a presence of additive and organic chloride compound in the isomerization zone. The reference further discloses: "While not wishing to be bound by any particular theory, one reaction mechanism that is believed to be occurring in the inventive process which helps to prevent the deactivation of the catalyst is that high molecular weight hydrocarbons, such as C.sub.5 to C.sub.8 hydrocarbons, carbon, and/or coke react with the free metal chloride, such as free

aluminum chloride, present in the additive instead of forming and accumulating within the pores of the catalyst, particularly at the reaction sites within the catalyst”.

(col. 1, lines 25-42, col. 2, lines 8-13, 49-60, col. 3, line 63 – col. 4, line 12col. 6, line 47 – col. 7, line 40).

It is acknowledged that the Lin et al. reference is silent about the use of an “organic” aluminum halide.

The invention as whole would have been obvious to one having ordinary skill in the art at the time the invention was made, since the reactant necessary for the formation of organic aluminum halide and the postulated reaction thereof as stated above, would sufficiently suggest to the artisan the utility of the reaction product, i.e. the organic aluminum halides as suitable deactivation retardants. Given such suggested reaction mechanism, the selection of the combination of the reactants in-situ or ex-situ would not impart patentable distinction to an otherwise obvious process.

Sherman teaches a process for the isomerization or alkylation of a hydrocarbonaceous feed wherein the catalyst can be produced in-situ i.e. in the liquid reaction medium by combining the catalytic components therein, including a Bronsted acid, or a donor, e.g. butyl chloride and a Lewis acid, represented by the formula $R_{(m-2-z)}MX_{2+z}$ M can be Al, X is a halide, e.g. chloride or bromide, r is a hydrocarbyl radical having 1 to 12 carbon atoms, m is an integer equal to the greatest oxidation state of M, and z is an integer of 0, 1 or m-2, e.g. isobutylaluminum dichloride or $AlCl_3$; preferably dissolved in the hydrocarbon liquid , corresponding to the applicant's “carrier” (col. 7, lines 38-56, cols 10-11, *supra*, col 13, lines 10-60).

In the alternative, it would have also been obvious then, to one having ordinary skill in the art at the time the invention was made to replace an inorganic aluminum halide additive with an organic one since Sherman teaches the substitutability thereof as Lewis acid source.

Response to Arguments

4. Applicant's arguments filed on 8/4/2003 have been fully considered but they are not persuasive. The applicant argues that the Lin et al. and Nguyen et al. teachings cannot be combined because there is no motivation to combine them. The applicant further argues that Sherman catalyst calls for a Bronsted acid as an integral part of the catalyst while in Lin et al. metal halide as additive. The argument is not persuasive because, irrespective of how each reference labels HCl, which is the preferred Bronsted acid for Sherman is also present in Lin et al.'s reaction medium.

The applicant's argument that HCl is harmful to Lin catalyst, while Sherman calls for it is not persuasive because it is not based on the reference teachings. In fact it contradicts, the commonly invented reference disclosure. When there is a positive teaching to the contrary, a speculation based on the teaching that water amount should be minimized cannot be considered probative.

In response to applicant's argument that Sherman and Lin references cannot be combined, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references.

Art Unit: 1764

Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In the instant case the import of the Sherman reference into Lin et al. reference is the replacability of an inorganic halide with an organic halide. Such suggestion is believed to be provided.

Conclusion

The Declaration filed on 8/4/2003 under 37 CFR 1.131 is sufficient to overcome the Nguyen et al. reference., hence the rejection based thereon is hereby withdrawn.

The references made of record, not relied upon were found pertinent to applicant's disclosure.

Wu et al. (USP 5,414,184) and Masters et al. (USP 4,533,651) are both pertinent to the applicant's disclosure for their disclosure of **isomerization processes using organic aluminum halides**.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

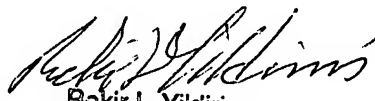
Art Unit: 1764

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bekir L. YILDIRIM whose telephone number is (703) 308-3586. The examiner can normally be reached on 10:30-8:00 (alternating Mondays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3599 for regular communications and (703) 872-9467 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0611.


Bekir L. Yildirim
Primary Examiner

BLY
August 20, 2003

Bekir L. Yildirim
Primary Examiner